

RAB Minutes

NAS North Island

Restoration Advisory Board

Introduction

The forty-fourth Restoration Advisory Board (RAB) meeting for Naval Air Station (NAS) North Island was held on Wednesday, March 18, 1998, at the Coronado Public Library from 6:00 p.m. to 8:30 p.m.

Mr. Arno Bernardo, Navy Co-Chair, called the meeting to order at 6:06 p.m. and welcomed RAB and community members.

RAB Attendance: Arno Bernardo, Alan Clark, Alice Gimeno, Laura Hunter, Sandor Kaupp, Richard Mach, Dottie Marron, Art Van Rooy

Public/Navy Attendance: John Anderson, Jerry Bailey, Rick Basinet, Mark Bonsavage, Neal Clements, Bill Collins, Merry Coons, David Demars, Marilyn Field, Betsy Gill, Ted Henry, Stephanie Kaupp, Ed Kleeman, Jim Kozakowski, Janet Lear, Mary Masters, Vivian Mayer, Ray Mello, Amanda Morris, Scott Morris, Roy Oliveira, Rick Phillips, Ken Richter, Rey Ringor, Brian Sanders, Betty Schmucker, Kristina Talbergs, Tom Young

APPROVAL OF MEETING MINUTES FROM MARCH 18 MEETING:

Ms. Hunter suggested tightening up the language on page 3, referring to Ms. Marron renewing contact with TOSC. Mr. Kaupp seconded, and the minutes were approved as amended.

RAB OUTREACH – Rey Ringor

The RAB document was reviewed and approved by the Department of Toxic Substance Control [DTSC] and the North Island Public Affairs Office [PAO] and have been sent to NAS North Island and Naval Amphibious Base [NAB] staff. The PAO sent press releases to the *Coronado Journal*, *Eagle*, and the *Navy Compass* and will publish it in the *Plan of the Week*. There will be another public notice in late March or early April, and then it will also appear in the *San Diego Union Tribune* and the *Coronado Eagle* May 1st.

Southwest Division and Bechtel met to update the fact sheets, and they will be ready May 1st. The June 18th RAB meeting will be combined with a public meeting. Mr. Bernardo added that the information is also available on the NAS North Island Navy Environmental Leadership Program [NELP] web site. Ms. Marron said she had mailed a copy of the press release to Mr. Dittbenner.

RAB TECHNICAL ASSISTANCE CONTRACT [TAC] LETTER – Laura Hunter

The draft letter from the RAB to the Navy was sent out in the packet with the agenda and minutes.

Ms. Hunter asked if there were any comments or objections to the draft. There was a question as to whether the RAB bylaws permitted the RAB to vote, and Mr. Mach explained that the RAB was able to vote, and that a majority vote is acceptable so long as all opinions are also noted. The RAB voted to approve and the letter will be finalized and sent to the Navy.

TECHNICAL OUTREACH SERVICES TO COMMUNITIES [TOSC] – Dorothy Marron

Ms. Marron introduced Mary Masters from TOSC and gave the RAB a brief summary of her background. She has a Masters of Science in Civil Engineering Infrastructure Planning and Management from Stanford. She has worked for Stanford University, the EPA and Hewlett Packard.

Ms. Marron suggested that Ms. Masters look into the contamination of San Diego Bay from the Site 9 VOC's. Ms. Hunter said that the RAB really wants to know what it can do about that site. She also said the RAB could use TOSC input on Site 5 and the natural attenuation. Ms. Marron explained that since Sites 9 and 11 are usually bunched together, Ms. Masters received information on both sites.

Ms. Masters explained that she is the only person working in Region 9. TOSC serves groups that are unable to receive any other assistance. She is receiving numerous requests, and must prioritize. Once the RAB receives TAPP funding, it will not be as high a priority. Mr. Mach explained that TAPP requires the RAB to explore other resources, including TOSC. Ms. Hunter agreed that it would be worthwhile to have Ms. Masters get involved with Site 9.

SITES 2 & 9 UPDATE – Bill Collins

Background: This involves clean up of some low-level radiation contaminated soil at two small sites. Site 2 is an area approximately 25 X 30 feet and was on the site of an old landfill. Everything from municipal trash to hazardous waste was sent there. The incinerator shut down in the 1940's. Several years ago a removal action took place and a concrete retaining wall was built to cap the incinerator ash exposure. The contamination is next to the old incinerator building. Site 9 had a low-level radioactive waste storage area, approximately 40 X 40 feet. The area was surveyed 3 times, first in 1993. The contaminant of concern is Radium 226.

The proposed schedule is to issue the Action Memo on April 15th, at which time there will be public notices in 3 newspapers and the Administrative Record will be established. After 30 days for comment, construction will begin in June and finish approximately 1 month later. In response to Ms. Hunter's questions, Mr. Collins explained that the Department of Defense [DoD] policy is that the Army manages low-level radioactive waste disposal. Currently everything has been sent to Envirocare in Utah. Ms. Hunter asked if this was the same contamination as had previous been discussed, and Mr. Collins said it was a different spot, and that the other spot would only be cleaned up if a decision was made to tear down the retaining wall. He will consult with the Radiological Affairs Support Office and give the RAB the information.

Mr. Mach told the RAB that the only difference between a time-critical and a non-time-critical removal action is the amount of time taken for planning. If planning can be done in less than 6 months, it is considered time-critical. An emergency removal action is based on severity and risk.

Ms. Field asked what the clean-up method would be. Mr. Collins said that they would dig and haul. After the soil is put into drums it will be stored temporarily at Site 9 and then arrangements will be made with the Army for disposal. In all probability 50 drums will be removed on one or two trucks.

BIOASSAY ENVIRONMENTAL SAMPLING AND ANALYSIS PLAN CONSULTANT – Ted

Henry

Mr. Henry is from the Department of Toxicology at the University of Maryland. He founded the Community Health Assessment & Public Participation [CHAPP] Center. He has worked for an assistance group on the Aberdeen Proving Grounds. Mr. Henry described his task as assessment of Site 1, which includes Outfalls 3-8 in the San Diego Bay, and Outfalls 1,2, and 16 discharging into the Pacific Ocean.

Mr. Henry briefly reviewed the CERCLA process – Site discovery, hazard ranking, national priorities listing, remedial investigation, feasibility study, record of decision, remedial design/remedial action, deletion from national priorities list. He covered the basics of risk assessment – characterization of the site, exposure assessment, effects assessment, integration, and risk management. Mr. Henry stressed that community involvement as well as participation of regulators is crucial in risk assessment, since the outcome may be questionable when there is no additional input.

Reference sites are used to give background. Some efforts use ambient, rather than natural, conditions. Some sites have conducted reference-sampling programs to generate contaminant concentrations representative of background. However, given the extent of contamination in San Diego Bay, efforts to pick the areas of least contamination reflect a flawed approach. Reference concentrations are used to exclude certain chemicals from those being assessed. If the reference sites are contaminated, it could be argued that such a screening tactic is used to reduce cleanup and save money. The true value of reference or background concentrations is to provide a tool to assess clean-up options.

In San Diego Bay, reference concentrations were higher for various compounds, impacting risk assessment. The reference concentrations exceeded various comparison data, including some ER-M values. PCB's and mercury at some reference sites were higher than ER-M's. 57 of 78 sites had poor survival in bioassays and exceedances in chemical concentrations. The clustering of reference sites increased the likelihood of biased data. The grouping of data by grain size has scientific merit, but was not useful in this study.

In reviewing the statistical analysis, Mr. Henry mentioned that there are many more unknowns and influencing factors in environmental contamination. This lack of control results in more complicated data and more uncertainty in conclusions. In this investigation, the hypothesis being tested is that contamination is higher at the outfalls than at the reference sites. A two-tailed T-test would have been more appropriate than a one-tailed T-test. Other flaws in the assessment included the use of a 99% confidence limit, while the Bioassay Environmental Sampling and Analysis Plan [BESAP] indicated that 95% would be used. A 95% level is much more common and appropriate. The study did not allow determination of whether sediment contamination is from the outfalls, if the contamination is impacting the environment or whether the contamination should be remediated.

Mr. Henry had some comments on the data assessment. Comparing group data only allows general conclusions. Grouping data didn't allow for adequate assessment on an outfall by outfall basis. Data within each outfall were not fully assessed. Hot spots of contamination within an outfall were not fully delineated. Data should be presented in tabular and graphical terms. Data presented within text were those exceeding statistical limits. Outfall exceedances relative to distance were presented for some compounds, which is a very useful tool. However, it is not clear how the compounds were selected and ratios made interpretation more difficult. Objective criteria for determining potential concentrations and selecting data to present should be used. These would be ER-Ls for ecological concerns and risk-based concentrations (RBC's) for human health concerns. Mr. Henry showed samples of how data should be presented.

Mr. Henry was impressed with the bioassays – the different media, porewater in the sediment, and the effort to use different bioassays. Assessment of various media/exposure pathways was a good approach. Comparison to reference samples strongly impacted conclusions. There was evidence of bioaccumulation, indicating need for *in situ* studies. Bivalve toxicity deserves a second look.

As for dredging issues and characterization and evaluation, various factors that may have influenced findings were not discussed or evaluated, e.g., the contamination found in Outfalls 9 through 15. That would effect how one would assess Outfalls 3 through 8.

If any groundwater plumes discharge in the area, it would be important to measure for VOC's in the sediments. That was not done, although there was some mention of VOC sampling in one of the appendices. Mercury is clearly an issue in the San Diego Bay. VOC's, Rad and explosive compounds weren't sampled for.

Environmental samples were not analyzed for all major classes of compounds. At a minimum, radiological parameters, explosives and explosive degradation products should be tested for. There should be core sampling at each outfall, instead of only at 10 and 30 meters distance from the outfall. While core sampling was performed at each ocean outfall, bioassays were not. Mr. Henry thought it necessary to redo the risk assessments. A significant flaw in the assessment is that a straight line doesn't work, that dispersement needs to be measured. There are different compounds at different concentrations, there are higher and lower concentrations not correlated to distance. You need both straight out and lateral sampling. The testing performed was a Phase I study. Phase II testing at the outfalls is required. Mr. Clark asked why the concentration on some compounds is high further out. Mr. Henry mentioned the issue of wave action. Mr. Richter, the Navy's consultant on the site, added that is why it is important to sort sediment grain size, since it controls many aspects of contaminant adsorption and contaminant bioavailability. Fine grains, usually found further from shore, usually adsorb more contaminants. Mr. Henry agreed with Mr. Richter, but said he was not sure that using grain size at the beginning was a good way to separate data. Ms. Hunter commented that putting risk assessment and risk management together was a problem. Mr. Henry concurred, saying that the science and the process isn't there to make a methodical assessment.

Mr. Henry expressed concern that there was no benthic community assessment. In a triad approach, chemistry, bioassays and benthic community populations are evaluated. Grab samples of benthic organisms are collected and then the number of different species are counted and compared to a reference number.

Contaminant distribution parallel to the shoreline was not considered in selecting Bay sediment sample locations. No assessment or discussion of the discharge pipes themselves was presented. The possibility of contamination remaining in the discharge system should be considered. There was no discussion of the potential influence of other AOC's or SWMUs that may be partly responsible for contamination. Visual inspection of outfall sediments was not considered; the Navy has SEALS and contractors available. Any sources within surface sediments should be removed, if possible. Mr. Henry opined that the Navy and its consultants went into the study thinking that they were not going to dig up sediment.

Mentioning that ordnance had been discovered in sand dredged from San Diego Bay, Ms. Hunter asked if there was an available list of explosives. Mr. Henry said there was and that he would provide a list of them and appropriate sampling methods.

Conclusions: Mr. Henry said it is important to really look at the data and the extent of contamination in San Diego Bay. A remedial investigation should involve a full risk assessment, and deciding whether or not to clean it up belongs later on in the process. The risk assessment and sediment comparisons were great. Multiple bioassays and risk screening should consider specific risks from

intertidal sediments. The data should be re-evaluated. Additional sampling will be required to assess the extent of the contamination, e.g., where does the contamination end? Mr. Henry would want to extend the sampling past 150 meters.

The necessity for a removal action at Outfalls 1, 2 and 16 (ocean outfalls) is likely. Pesticide (DDT, DDE, and DDD) levels were 25-60 times higher than the ER-M, indicating significant contamination. At least a half dozen PAH's are above their ER-M's. PCB's are above ER-L and down to 6 feet.

Bioassays were not done at ocean outfalls. After data are adequately evaluated and additional investigation is completed, a more rigorous risk assessment should be conducted. Chemicals exceeding comparison criteria will need to be included, regardless of whether they exceed contaminant concentrations at other sites within the Bay, and human exposure to seafood consumption will need to be evaluated. Future work plans for sampling and evaluation need to have active participation between the state regulators, the EPA and the RAB.

There are different criteria for ecological and human health. Mr. Henry mentioned the study using Washington State data, higher than the ones used here. Florida Department of Environmental Protection standards are usually the lowest.

In response to a question from Ms. Hunter, Mr. Henry explained that TEL is the threshold effects level, where there is an 85% confidence level. The ER-L is the effects range – low at 10%, and the ER-M is the effects range – median at 50%. Florida also has a probable effects level, usually falling somewhere below the ER-M.

Mr. Henry summarized, saying that risk assessment is subjective. There are approximately 80,000 chemicals in use today and we have good information on about 600 of them. That doesn't even address issues of interaction and synergy. He then asked for questions.

Mr. Kaupp asked Mr. Richter about the choice of random samples. Mr. Richter said the consultants were surprised that contamination was higher further out. They had expected it to fall off logarithmically. The number of stations was determined by the budget, by how many could they afford. Sampling randomly was done because of potential dispersion due to tidal action. Mr. Kaupp asked if the sampling was done that way because the assumption was that the outfalls were the contaminating source, and Mr. Richter agreed. He said that if he had to redo those numbers, he would look at fine-grain with high TOC first. Yet, there are multiple sources of contamination in San Diego Bay, and you have this adsorptive sponge off of your site collecting contaminants for perhaps 50 years. You see an integrated burden in the sediments, and it is difficult to track down the smoking gun. There was no TBT detected, which was reassuring since you wouldn't expect that from storm water outfalls. To map out the best sampling design, you would do a regularly spaced grid, with a minimum space between sampling sites.

Mr. Kaupp also asked about the statistical analysis, using the 99% v. 95% standard. That would appear to increase the effect by 50%. The national standard, the NOAA standard, is the 99%. . The original report concluded that there are very few sites that require further investigation. If you compare San Diego Bay using the national standard, there is very significant contamination at the outfalls. There are a lot of hot spots and they are systematic rather than random. The background in the bay is between ER-L and ER-M.

Mr. Richter gave some background on the approach and methods he utilized. He talked about the Ed Long, AET study, saying there are some weaknesses in the approach. Mr. Richter told the RAB that Mr. Henry was given the original Bechtel statement of work (SOW) Sampling Plan, which was not really used. In between the original SOW and the final game plan were two public meetings with regulatory agencies where they went through the selection of reference stations, at which time they

discussed the statistical arguments for doing 99th percentile, or multiple, testing. The main argument was in selecting reference stations. One hundred two stations within San Diego Bay were first screened for toxicity using Rhepoxynius and polychaete, then for chemistry. They decided on an arbitrary value of at least 75% survival of Rhepoxynius and Neanthes. Only one station did not exceed ER-L. Others were low, but had high toxicity. Chemistry and toxicity went in opposite directions. Mr. Henry added that if it were possible to do bioassays at the same time as chemical analyses, you would be working with the same concentrations.

Ms. Kaupp asked whether the opinions of outside consultants wouldn't be better utilized at the beginning of the clean-up effort, rather than at the end. Ms. Hunter said that's why we need technical assistance. Even late in the game is better than not at all. This site could be one we consider for the next TAPP.

Mr. Richter said they did actually collect benthic community data and that the samples are all still in jars. The problem is that there isn't a good library of benthic community organisms here, and that the EPA is beginning to shy away from benthic studies.

Mr. Henry added that these discussions are most valuable early in the process. He acknowledged flaws with ER-Ls and ER-Ms, but asked what do we use in the meantime? He said he was happy to hear that EPA is moving away from benthic studies. The issue is not whether there is contamination from the outfalls, but rather whether there is contamination that is impacting the environment. He said he doesn't see risk assessment as a search for the smoking gun.

Mr. Richter explained that the contaminated reference sites were chosen *a priori*, before they had the chemistry data for them. He suspects this was due to sediment heterogeneity. We shouldn't spend too much time on the chemistry; it's the biologics that are important. Mr. Henry said that the bioassays were so impacted by reference sites that you didn't come out with much. Ms. Hunter added that the San Diego Bay protection sites were chosen because they were looking for toxic hot spots.

Mr. Richter and Mr. Henry had an interchange about using the data from the 1993-94 study.

Mr. Mach spoke to the issue of using consultants earlier in the process, and has updated the list of all documents anticipated for the next year, based on the discussion at the February RAB meeting. This should help focus future TAPP grants early in the process. Mr. Bernardo thanked Ted Henry for giving a thorough presentation; saying it was money well spent. It would be wise to explore and collaborate on third party review/analysis in the future. He added that it is important to acknowledge the technical expertise of the original consultants. We have to consider what's risk assessment and what's risk management. Ms. Hunter asked Mr. Bernardo if he thought it was appropriate use for TAPP funds to review work plans. He replied that it is acceptable and recommended.

Agenda Items for April RAB Meeting:

Slag consultants next time

TAPP application (1/2 hour)

The meeting adjourned at 8:19 p.m.

The next RAB meeting will be Thursday April 16th, 1998 at 6:00 p.m. Future meetings are Wednesday, May 13th and Thursday, June 18th.

